

Summary of Charbert Hydrogen Sulfide Data – July 7 - July 15, 2004

The Rhode Island Department of Environmental Management (RI DEM) is currently operating two continuous hydrogen sulfide monitors in the neighborhood adjacent to the Charbert facility in Alton. The monitors are located in sheds on the properties of 10 Woodville-Alton Road, across Alton Pond from the facility, and 16 River Street, adjacent to the Charbert lagoons

During the period July 7 – 15, 2004, the monitor at River Street ran out of recording tape at about 9:00 AM on July 12th; hydrogen sulfide levels at that site were not recorded until the tape was replaced on July 16th. The Woodville-Alton monitor ran until 12:20 PM on July 15th. Hydrogen sulfide concentrations above 10 ppb were recorded at the River Street location on all five nights that the monitor was operational. Levels above 10 ppb were recorded at the Woodville-Alton site on two of the eight nights during that period that that monitor operated. Specifically:

- ◆ Hydrogen sulfide levels on River Street were intermittently at or above 10 ppb from 1:00 to 2:50 AM and again at 9:00 AM on Thursday, July 8th. The highest reading that morning, recorded at 1:41 AM, was 12 ppb and the highest one-hour average concentration was 9 ppb. Concentrations at the Woodville-Alton Road location were not elevated that morning.
- ◆ Hydrogen sulfide levels at the River Street monitor were elevated at 11:11 PM on Thursday, July 8th and again from 4:46 to 7:15 AM on Friday, July 9th. The highest reading, recorded at 6:46 AM, was 42 ppb and the highest one-hour average was 31 ppb. Concentrations at the Woodville-Alton Road location were not elevated during that period.
- ◆ Hydrogen sulfide levels on River Street were elevated intermittently between 2:56 and 7:45 AM on Saturday, July 10th. The highest reading recorded during that period was 39 ppb, recorded at 2:56 AM and the highest one-hour average concentration was 26 ppb. The concentration at the Woodville-Alton Road location briefly rose to 11 ppb at 6:45 AM.
- ◆ Hydrogen sulfide concentrations at the River Street location were above 10 ppb intermittently between 11:16 AM on Saturday, July 10th and 7:30 AM on Sunday, July 11th. The highest reading during that period was 45 ppb at 6:36 AM and the highest one-hour average concentration was 33 ppb. Concentrations at the Woodville-Alton location were 11-12 ppb at 1:20 and 3:25 that morning.

- ◆ Hydrogen sulfide levels frequently were elevated at the River Street monitor between 10:11 PM on Sunday, July 11th and 6:45 AM on Monday, July 12th and again from 8:16 to 8:45 AM on the 12th. The highest concentration during that period was 29 ppb at 11:51 AM on the 11th and the highest one-hour average concentration was 26 ppb. Concentrations were not elevated at the Woodville-Alton monitor during that night and morning and remained at or below 4 ppb for the rest of this monitoring period.

In summary, elevated hydrogen sulfide levels occurred at the River Street location during the late night to early morning hours on all five nights between July 7th and July 12th. The monitor did not operate from 9:00 AM on July 12th until the morning of July 16th. Stagnant wind conditions or southerly winds were present when the levels were elevated. Concentrations were lower at the Woodville-Alton Road monitor than at the River Street location but were slightly elevated on two of the eight nights that that monitor operated.

Concentrations above 90 ppb, the upper end of the range of the hydrogen sulfide concentrations that can be measured with the instrumentation in its current configuration, have been recorded for brief intervals in two previous weeks. In order to record higher concentrations, RI DEM plans to install a monitor configured to measure levels up to 1500 ppb adjacent to the current River Street monitor during the week of July 19, 2004. Since RI DEM currently has only two working hydrogen sulfide continuous monitors, the Woodville-Alton monitor was removed from that site on July 16th and will be reconfigured and used as the second monitor at the River Street location.

Table A shows the maximum 15-minute, one-hour and 24-hour average concentrations (in ppb) measured by each monitor during the latest and previous monitoring periods.

Table A Maximum Hydrogen Sulfide Levels

Monitor	Date	Maximum 10-minute Level	Maximum 1-hour Level (HEALTH nuisance range is >2 - <100 ppb)	Maximum 24-hour Level (HEALTH nuisance range is >2 - < 30 ppb)
River Street	6/7– 6/14/04	78 ppb	49 ppb	7 ppb
	6/15 – 6/21/04	44 ppb	29 ppb	7 ppb
	6/21 – 6/28/04	90 ppb	79 ppb	15 ppb
	6/28 – 7/7/04	90 ppb	78 ppb	16 ppb
	7/7 – 7/12/04	45 ppb	33 ppb	7 ppb
Woodville-Alton Rd	5/13 – 6/7/04	6 ppb	2 ppb	0.2 ppb
	6/6 – 6/14/04	27 ppb	19 ppb	3 ppb
	6/15 – 6/21/04	10 ppb	5 ppb	1 ppb
	6/22 – 6/28/04	16 ppb	13 ppb	2 ppb
	6/28 – 7/7/04	39 ppb	28 ppb	2 ppb
	7/7 – 7/15/04	12 ppb	7 ppb	1 ppb

The maximum levels recorded by the River Street monitor during the July 8 - 12 period continue to be in the range of values that are classified as nuisance levels by the Rhode Island Department of Health (HEALTH). These levels would clearly be associated with a noticeable rotten-egg type odor. HEALTH warns that people exposed to nuisance levels of hydrogen sulfide may experience nausea and stress from the odors, an increase in non-specific symptoms and a possible exacerbation of chronic respiratory symptoms in hypersensitive individuals. The concentrations at the Woodville-Alton Road location were also in the nuisance range for brief intervals.

Hydrogen sulfide monitoring is continuing at the River Street location. For more information about sampling results, contact Barbara Morin at 222-4700, ext. 7012.